

AUDUBON ROCKIES: EXPLORE THE SAGEBRUSH ECOSYSTEM



Our nationally-recognized educators have created a variety of fun and free resources to bring the plants and wildlife of the sagebrush ecosystem to you!

About the Sagebrush Ecosystem and Sagebrush Plants

Found in 11 western states and 2 Canadian provinces, this rugged and beautiful ecosystem is home to more than 350 wildlife species! It is the largest ecosystem in the United States.



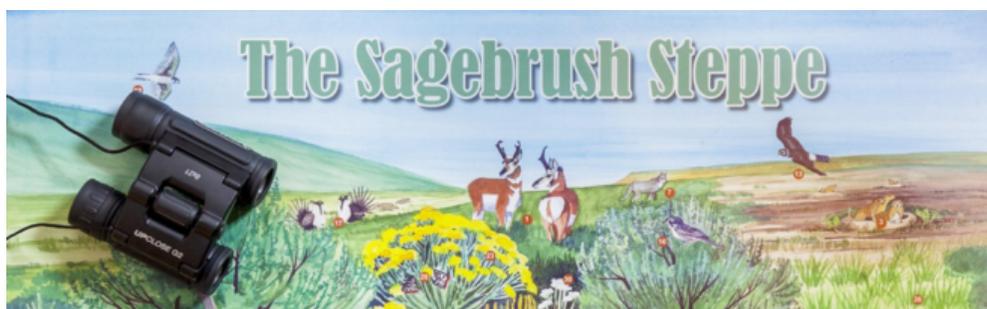
Sagebrush (*Artemisia tridentata spiciformis*). Photo by Matt Lavin/Flickr

The ecosystem is named after the sagebrush plant. Found across this area, this hardy family of shrubs can live up to 150 years. Because they live in an arid environment, they have a large taproot that absorbs water deep underground, as much as 13 feet. Shallow roots that spread out near the surface allow them to capture water from brief rainfalls. Their leaves end in three points, and when crushed have a unique aroma.

Sagebrush plants grow about 3-6 feet tall. They provide food, water, and shelter for a wide range of wildlife that are found nowhere else in the world. The leaves, fruit and seeds of sagebrush are important sources of food for pygmy rabbits, mule deer, pronghorn, and birds like Greater Sage-Grouse and Gray Vireos!

Native Americans used the leaves of sagebrush to prevent infection of wounds, reduce bleeding, and even to treat headaches and athlete's foot! You can use different parts of the plant to make tea. This silvery gray-green bush is such an important part of the West, that it was named the official state flower of Nevada in 1917.

We hope you enjoy the following Web of Life Flashcards, designed to encourage learning about plants and wildlife that call the sagebrush ecosystem home.



Web of Life: Sagebrush

Grade Level: K-up

Subject Areas: Science, Environmental Education, Math

Materials: Habitat cards, yarn, web of life poster

Objectives: In this activity, children will learn about food webs, discovering the many ways that plants and animals of an ecosystem are connected.

Key topics:

- A food chain is a simplified way of showing energy relationships between plants and animals in an ecosystem. For example, a food chain of sun > plant seed > mouse > owl shows that a plant seed that grows from the sun's energy is eaten by a mouse, which in turn is eaten by an owl. However, in reality it is rare for an animal to eat only one type of food.
- A food web represents the interaction of many food chains in an ecosystem.

Introduction: Invite children to think about the food web of the sagebrush ecosystem. Ask:

1. What plants and animals might you find in a healthy sagebrush ecosystem? (Be sure to include mammals, insects, birds, reptiles, and plants).
2. What might happen to the sagebrush ecosystem if we remove an item from this list?
3. What might happen if humans are introduced to this ecosystem?

Doing the activity:

1. Hand each student one card from the sagebrush ecosystem habitat cards. Hint: If you need more cards, pull from the prairie habitat cards or local habitat type.
2. Allow time for student to read the card then ask students to stand in a circle.
3. Each student introduces him/herself and their role in the ecosystem (I am a sage sparrow, I eat...).
4. Using yarn, let students know that you are going to create a web of life. Starting with the "sun" have that student think about who uses the sun's energy. The student will hold on to one end and pass the yarn ball to a student who uses its energy. That student might be "sagebrush" and then that student will decide who might use or create energy for another plant or animal. Each time the student will keep hold of one end of the yarn before passing it on.
5. After each animal and plant has been used at least once you can stop.
6. You should have a large web created by the yarn. Ask students what they created. What happens if you remove one piece of the web?

Extensions:

1. Have student do online research on their plant or animal.
2. Have students use habitat cards to choose one habitat to study and create a poster either alone or in groups.

Sagebrush Steppe Ecosystem

The Sagebrush Steppe Ecosystem is a type of grassland that doesn't have trees, is hot and dry in the summer, is cold and windy in the winter, has a high elevation, and is mostly flat. Despite these challenges, more than 350 types of plants and animals call this habitat home.



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Name: White-tailed Jackrabbit

Scientific Name: *Lepus townsendii*
Predators: Coyotes, fox, raptors
Prey or Food: Plant matter

DID YOU KNOW?

The jackrabbit can camouflage with brown fur in the summer and white fur in the winter.



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Name: Short-horned Lizard

Scientific Name: *Phrynosoma douglassi*
Predators: Coyotes, birds, snakes
Prey or Food: Insects

DID YOU KNOW?

To escape predators, short-horned lizards can inflate their bodies up to twice their size.



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Name: Wyoming Big Sagebrush

Scientific Name: *Artemisia tridentate*
Predators: Pronghorn, birds, small mammals
Prey or Food: Water, sun, soil, air

DID YOU KNOW?

Cowboys used to rub sagebrush on themselves to combat bad odors before heading to town.



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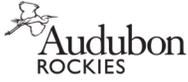
Name: Scarlet Globemallow

Scientific Name: *Sphaeralcea coccinea*
Predators: Bees, butterflies, birds (pollen) and herbivores

Prey or Food: Water, sun soil, air

DID YOU KNOW?

This plant survives well in the sagebrush ecosystem because it doesn't need a lot of moisture and can withstand strong winds.



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Name: Coyote

Scientific Name: *Canis latrans*

Predators: Humans, wolves

Prey or Food: Small mammals, eggs, carrion

DID YOU KNOW?

The coyote's ability to eat a wide variety of prey has allowed them to live in almost every habitat in the US.



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Name: Darkling Beetle

Scientific Name: *Eleodes hispilabris*

Predators: Reptiles, amphibians, birds, mammals

Prey or Food: Decaying matter, cow dung

DID YOU KNOW?

When disturbed, this beetle can spray a foul-smelling chemical.



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Name: Sage Thrasher

Scientific Name: *Oreoscoptes montanus*

Predators: Raptors, fox, coyotes, badger (eggs)

Prey or Food: Insects, berries

DID YOU KNOW?

Sage thrashers can imitate the songs and calls of other birds.



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Name: White-tailed Prairie Dog

Scientific Name: *Cynomys leucurus*

Predators: Badgers, ferrets, raptors

Prey or Food: Plant matter

DID YOU KNOW?

Prairie dog "towns" are complex societies with a vast underground burrows and sophisticated communication system.



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Name: Rubber Rabbitbrush

Scientific Name: *Ericameria Nauseosa*

Predators: Bees, butterflies, birds (pollen) and herbivores

Prey or Food: Water, sun, soil, air

DID YOU KNOW?

Rabbitbrush was used to make a yellow dye, chewing gum, and can produce a rubber-like substance.



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Name: Prairie Falcon

Scientific Name: *Falco mexicanus*

Predators: Other raptors

Prey or Food: Small mammals, other birds, reptiles

DID YOU KNOW?

Prairie Falcon build their nests in cliffs.



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Name: Pronghorn

Scientific Name: *Antilocapra americana*

Predators: Pronghorns used to be hunted by the now extinct American Cheetah.

Prey or Food: Sagebrush, other shrubs, grasses

DID YOU KNOW?

The pronghorn can sprint as fast as 60mph and can sustain a speed of 30 mph for miles.



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Name: Sagebrush Vole

Scientific Name: Lemmings curtatus

Predators: Coyotes, fox, raptors

Prey or Food: Sagebrush, rabbitbrush, flowers

DID YOU KNOW?

Sagebrush voles have been known to shelter in and even eat undigested plant matter from cow "pies".



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Name: Brewer's Sparrow

Scientific Name: Spizella breweri

Predators: Raptors, fox, coyotes, badger (eggs)

Prey or Food: Insects, grass, seeds

DID YOU KNOW?

This little brown bird can be hard to spot but easy to hear singing to establish territories.



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Name: Harvester Ant

Scientific Name: Pogonomyrmex occidentalis

Predators: Reptiles, amphibians, birds, mammals

Prey or Food: Seeds, pollen

DID YOU KNOW?

They gather food items to store in their mounds for winter months.



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Name: Western Wheatgrass

Scientific Name: Pascopyrum smithii

Predators: Rodents

Prey or Food: Water, sun, soil, air

DID YOU KNOW?

This is Wyoming's "State Grass".



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Name: Sun

Plants use the sun's energy to grow through a process known as photosynthesis. Because plants are the beginning of all food chains, all plants and animals transfer the sun's energy when they eat.



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Name: Greater Sage-Grouse

Scientific Name: *Centrocercus urophasianus*
Predators: Raptors, fox, coyotes, badger (eggs)
Prey or Food: Sagebrush, grasses, flowers, insects

DID YOU KNOW?

The boom of strutting males during mating season can be heard a mile away.



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